

ABSTRACT

BACKGROUND AND OBJECTIVES:

Obesity has become a major health problem all over the world particularly in developed countries, with increasing incidence and prevalence in adults and children. Obesity, in particular, excess of visceral adipose tissue, is causally linked with a cluster of metabolic risk factors including glucose intolerance, hypertension and dyslipidemia that leads to the development of Metabolic Syndrome. Omentin 1, an adipokine primarily secreted by visceral adipose tissue, is thought to play a role in the pathophysiology of insulin resistance, inflammation, endothelial dysfunction in obesity. The objective of this study was to compare Plasma Omentin 1 level in obese individual with and without metabolic risk factors and to correlate its level with Fasting plasma glucose, Hypertension, Serum Triglycerides and Serum HDL Cholesterol.

MATERIAL AND METHODS:

This study was conducted at M.G.M. Govt. Hospital attached to K.A.P.V. Govt. Medical College, Trichy. Study population was divided into two groups: 44 obese individuals without any metabolic risk factors as controls and 44 obese persons with any one of the following metabolic risk factors, Fasting Plasma Glucose ≥ 100 mg/dL, Blood Pressure ≥ 130 mmHg systolic or ≥ 85 mmHg diastolic, Triglycerides ≥ 150 mg/d, or HDL Cholesterol < 40 mg/dL and < 50 mg/dL for male & female respectively as cases. Plasma Omentin 1 level was measured by using ELISA method and compared in both groups.

RESULTS :

Plasma Omentin 1 level was very significantly low in cases when compared to controls ($p < 0.001$). Among the metabolic risk factors of obesity, Plasma omentin 1 level was significantly decreased in persons with high Systolic or Diastolic BP, Impaired Fasting Glucose as $FPG \geq 100$ mg/dl and high serum triglycerides ($p < 0.05$). Plasma Omentin 1 had significant negative correlation with Systolic Blood Pressure, Diastolic Blood Pressure and Serum Triglycerides. ($p < 0.05$).

CONCLUSION:

The results of our study shows that Plasma Omentin 1 level significantly decreased in obese individuals with metabolic risk factors when compared to controls. Omentin 1 had a statistically significant negative correlation with systolic BP, Diastolic BP and Serum Triglycerides level. Omentin 1 level decreased in persons with Impaired Fasting Glucose. Hence, Plasma Omentin 1 can be used as a novel biomarker for metabolic risk factors like Impaired Fasting Glucose, Hypertension and Dyslipidemia in obesity.

Key words: Omentin 1; Adipokine; Obesity; Metabolic Syndrome;

Insulin Resistance; Hypertension; Dyslipidemia.